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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,278	11/13/2003	Yutaka Igarashi	62758-064	5631

7590 05/11/2006

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Washington, DC 20005-3096

EXAMINER

NGUYEN, DUC M

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,278	IGARASHI ET AL.	
	Examiner	Art Unit	
	Duc M. Nguyen	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-4,9,12,14,16,18 and 19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8,10,13,15 and 17 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/13/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to applicant's response filed on 4/17/06. Claims 1-19 are now pending in the present application.

Information Disclosure Statement

1. The references listed in the information disclosure statements submitted on 11/13/03 has been considered by the examiner (see attached PTO-1449).

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

3. Applicant's election of Group II (claims 5-8, 10, 11, 13, 15 and 17) in the reply filed on 10/14/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Accordingly, claims 1-4, 9, 12, 14, 16, 18 and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 4/17/06.

Claim Objections

4. Claim 11 is objected to because of the following informalities:

Claim 11 recites a limitation that depends on claim 9 in the last line of the claim. Since claim 9 is restricted and drawn to a non-elected invention. Accordingly, "claim 9" should be deleted from the claim.

Suggestion : incorporate the subject matter of claim 9 into claim 11.

Appropriate correction is required.

Allowable Subject Matter

5. Claims 5-8, 10, 13, 15, 17 are allowed.
6. Claim 11 would be allowable if rewritten to overcome the objection(s) set forth in this Office action.
7. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 5, 10, the cited prior art fails to disclose or make it obvious an apparatus or method for a quadrature mixer which comprises components and connections as specified in the claims (i.e, Figs. 4 and 10).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Phanse et al (US 6,084,466), Variable gain current summing circuit with mutually independent gain and biasing.

Leenaerts (US 6,999,745), Mixer with a variable gain current-to-voltage converter.

Art Unit: 2618

Ashby et al (US 6,029,060), Mixer with current mirror load.

Kim et al (US 6,121,828), Mixer using replica voltage-current converter.

Khlat et al (US 6,933,766), Apparatus and method for improved chopping mixer.

Filoramo et al (US 6,433,647), Low noise I-Q mixer.

9. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner
should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,
Monday-Thursday (9:00 AM - 5:00 PM).

Or to Matthew Anderson (Supervisor) whose telephone number is (571) 272-
4177.

Duc M. Nguyen, P.E.

Apr 28, 2006

